



734L

UHF/FM Handheld Transceiver

Owner's Operating And Maintenance Manual

Contains: Specifications • FCC Information • Operation • Installation • Theory of Operation • Performance Tests • Alignment Procedure • Troubleshooting Charts • Complete Drawings • Parts Lists



Standard
Communications



SPECIFICATIONS

Performance specifications are nominal, unless otherwise indicated, and are subject to change without notice.

GENERAL

Frequency Range	406 - 420 and 450 - 512 MHz*
Number of Channels	6
Input Voltage	+11.25 VDC ($\pm 15\%$)
Current Drain (Standby)	20 mA
(Receive)	0.22 A
(Transmit).	1.1 A (Hi), 0.7 A (Lo)
Channel Spacing	25 kHz
Battery Life (10%/10%/80% Duty Cycle)	8 hours min. (Lo)
Dimensions	6 7/16" H x 2 1/2" W x 1 3/4" D
Weight	1 1/2 lbs.
Compliance	FCC Parts 21,22,83,90,95; DOC
FCC Type Acceptance Number	APV9T20280
GSA Contact Number	GS-00S-44560

RECEIVER (Measurements made in accordance with EIA Standard RS-316-A)

Sensitivity (12 dB SINAD)	0.35 uV max.
(20 dB Quieting)	0.5 uV max.
Squelch Sensitivity (Threshold)	0.25 uV max.
Modulation Acceptance Bandwidth	± 6.5 kHz min.
Selectivity	70 dB
Spurious and Image Rejection	55 dB
Intermodulation Rejection	63 dB
Audio Power Output @ 10% Distortion	0.8 W
Frequency Stability (-30°C to +60°C)	$\pm 0.001\%$
Channel Spread	2 MHz

TRANSMITTER (Measurements made in accordance with EIA Standard RS-316-A)

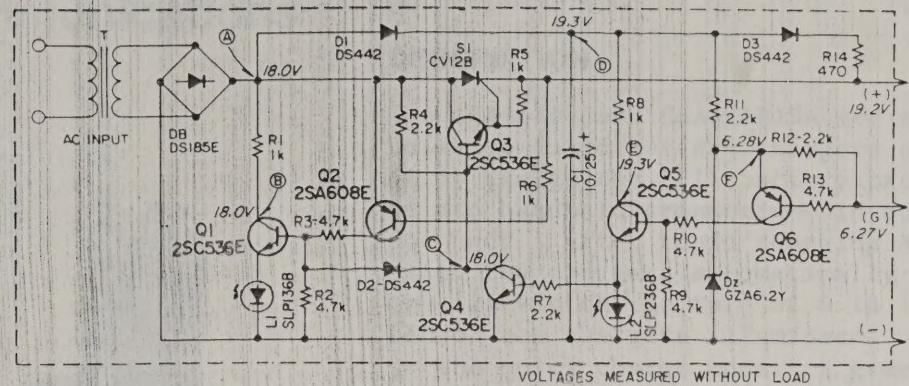
RF Power Output	3.5 W (Hi), 1.5 W max. (Lo)
Spruious and Harmonic Emissions	50 dB
FM Hum and Noise	50 dB min.
Modulation	16F3
Audio Distortion	5%
Frequency Stability (-30°C to +60°C)	$\pm 0.0005\%$
Channel Spread	5 MHz

*F1 = 406-420 MHz

F3 = 450-470 MHz

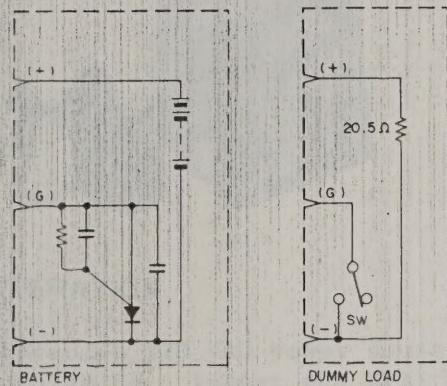
F4 = 470-490 MHz

F5 = 490-512 MHz



CSA4(AB)/CSA4(AB)SA 206249301-0

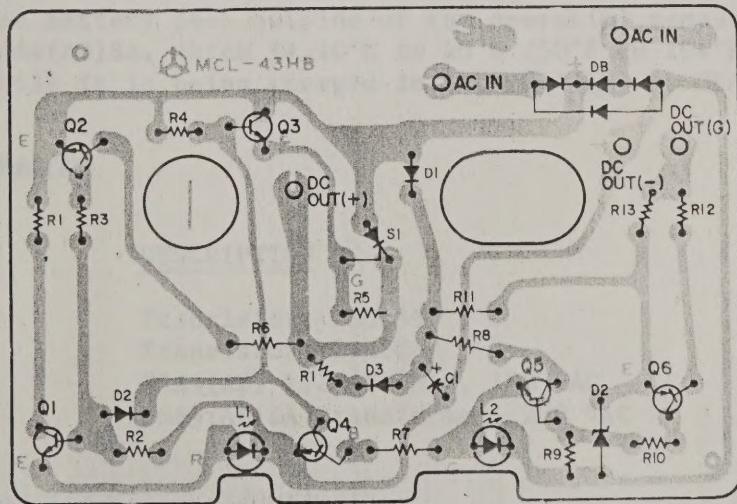
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TEST POINT	BATTERY LOAD		DUMMY LOAD	
	RAPID	TRICKLE	RAPID	TRICKLE
(+)	12.95V	12.51V	9.8V	0V
(G)	6.24V	0.7V	6.2V	0V
A	13.2V	13.06V	10.4V	10.9V
B	5.6V	13.05V	2.2V	10.9V
C	13.2V	0.07V	10.4V	0.06V
D	13.3V	17.5V	15.6V	16.3V
E	13.3V	2.25V	15.6V	3.7V
F	6.25V	6.2V	6.2V	5.9V

VOLTAGES WITH LOAD

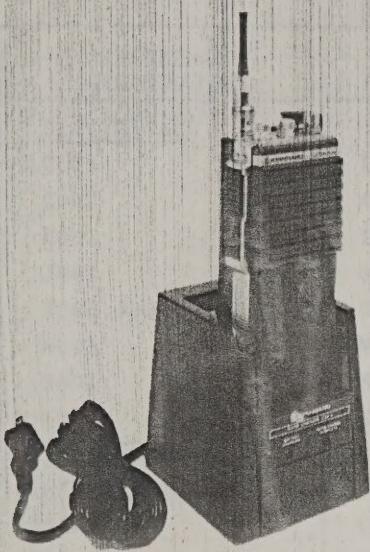
FIGURE 1. CSA4(AB), CSA4(AB)SA SCHEMATIC DIAGRAM



CSA4(AB)/CSA4(AB)SA 206249601-0

10-31-80

FIGURE 2. CSA4(AB), CSA4(AB)SA P.C. BOARD LAYOUT
SOLDER SIDE WITH COMPONENT OVERLAY



DESCRIPTION

The CSA4(AB) and CSA4(AB)SA are solid-state desk-top rapid battery chargers designed to fully charge the BP11 battery pack in or out of its handheld transceiver in approximately one hour. After rapid charging at the 500 mA rate, the chargers automatically switch to the trickle charge rate of 6 to 11 mA. A red LED on the chargers illuminates when they are in the quick charge mode. A green LED illuminates to indicate they are in the trickle charge mode.

The two chargers are distinguished from each other by their power configuration: the CSA4(AB) requires 120 VAC, 50/60 Hz; the CSA4(AB)SA requires 230 VAC, 50/60 Hz. Their dimensions are 3 3/4 wide by 4 1/8 deep, by 4 1/4 high inches.

OPERATION

Connect a 120 VAC power source to the CSA4(AB), or a 230 VAC power source to the CSA4(AB)SA. Insert the BP11 battery pack into the charger or insert the handheld transceiver with the battery pack connected to it into the charger. Be sure that the battery contacts touch the charger contacts. The battery pack should be fully charged in about one hour, but may be left in the charger indefinitely.

Do not charge the battery pack outside of the operating temperature range of the CSA4(AB), CSA4(AB)SA, which is 10°C to 40°C (50°F to 104°F). Do not operate a transceiver while it is being charged in the CSA4(AB) or CSA4(AB)SA.

REPLACEMENT PARTS

<u>REFERENCE DESIGNATOR</u>	<u>DESCRIPTION</u>	<u>SCC PART NUMBER</u>
Q1, Q3, Q4, Q5	Transistor, 2SC536E	HT305361EO
Q2, Q6	Transistor, 2SA608E	HT1060810R
--	CSA4(AB) Transformer, 120 VAC	TS1481314R
--	CSA4(AB)SA Transformer, 230 VAC	TS1481315R

MP635G MICROPHONE

REFERENCE DESIGNATOR	DESCRIPTION	SCC PART NO.
<u>ELECTRICAL:</u>		
C001	10 uF, 25 V Electrolytic Capacitor	EA10602530
C002	4.7 uF, 25 V Electrolytic Capacitor	EA47502530
E001	16 ohm Speaker	QK00508020
J001	6-pin Plug	YP10002240
J002, J003	2-pin Terminal	YL01020310
N001	Microphone Element	MS40000020
S001	Switch	SM01020210
Y001	Connective Cord	YB02000140
<u>MECHANICAL:</u>		
001B	Case	010C064010
002B	Nameplate	010C203210
003B	Sheet	010C107020
004B	Holder	010C271010
005B	Clamp	010C005010
06B	Screw	51380205P0
011B	Case	010C064020
012B	Click	010C062400
014B	Clutch	010C061010
015B	Spring	010C115010
016B	Shaft	010C112010
017B	Washer	54020401E0
021B	Hanger	010C155010
023B	Shaft	010C112020
024B	Ring	64001500R0
031B	Button	010C270010
032B	Spring	010C115040
033B	Screw	51382306P0
036B	Screw	51382306P0
037B	Washer	54052600R0
038B	Nail	58000107R0
039B	Protector	3512269020
040B	Buffer	010C056010
041B	Screw	51380325K0
042B	Screw	51380320K0

TN15 TONE BOARD

REFERENCE DESIGNATOR	VALUE	TYPE	SCC PART NO.	P.C. BOARD LOCATION
<u>CAPACITORS:</u>				
C101,C111,C112, C113,C114,C121	1 uF, 50 V	Electrolytic	EJ10505010	-
C102,C104,C105, C109,C110	10 uF, 16 V	Electrolytic	EJ10601610	-
C108	1 uF, 25 V	Electrolytic	EV10502560	-
C116,C117	22 uF, 16 V	Electrolytic	EV22601660	-
<u>SEMICONDUCTORS:</u>				
Q101	AFH24F300	I.C.	HC10010230	-
Q102	MC4138	I.C.	HC10038060	-
Q103,Q106,Q108, Q109,Q112,Q113	2SC536	Transistor	HT305360F0	-
Q104,Q105	1S1555	Diode	HD20011050	-
Q107	HZ6L	Zener Diode	HD30008010	-
Q110	SDT100	Thermistor	HH00007030	-
<u>RESISTORS:</u>				
R106,R107	1M ohm, 1/8 W	Chip	RI05105180	-
R108	270K ohm, 1/8 W	Chip	RI05274180	-
R109	150K ohm, 1/8 W	Chip	RI05154180	-
R110,R122	10K ohm	Trimming	RA01030500	-
R124	1M ohm	Trimming	RA01050100	-
Resistors not listed are standard, fixed carbon composition, ±5%, 1/8 watt. The resistance values, in ohms, are indicated on the schematic diagram.				
<u>MISCELLANEOUS ELECTRICAL:</u>				
J001	9-pin	Plug	YP10001060	-
J101	-	Jumper	75060251P0	-
<u>MECHANICAL:</u>				
101K	-	Shield	008C109012	-
102K	-	Screw	51302606B0	-

CSA4 SERIES RAPID CHARGER

REFERENCE DESIGNATOR	DESCRIPTION	SCC PART NO.
<u>ELECTRICAL:</u>		
C1	10 uF, 25 V Electrolytic Capacitor	EA10602530
D1,D2,D3	Diode (DS442)	HD2001703R
DB	Bridge (DS185E)	HE2000103R
DZ	Zener Diode (GZA6.2Y)	HD3000203R
L1	L.E.D. (SLP136B)	HI1001703R
L2	L.E.D. (SLP236B)	HI1001803R
Q1,Q3,Q4,Q5	Transistor (2SC536E)	HT305361E0
Q2,Q6	Transistor (2SA608E)	HT1060810R
R1,R5,R ₆ ,R8	1K ohm, 1/4 W Resistor	GD05102140
R2,R3,R9,R10,R13	4.7K ohm, 1/4 W Resistor	GD05472140
R4,R7,R11,R ₁₂	2.2K ohm, 1/4 W Resistor	GD05222140
R14	470 ohm, 1/4 W Resistor	GD05471140
S1	Thyristor (CV12B)	HB0000101R
T (CSA4)	Transformer (120 VAC)	TS1481312R
T (CSA4SA)	Transformer (230 VAC)	TS1481313R
<u>MECHANICAL:</u>		
0001	Case	206Z064010
0002	Holder	206Z271010
0003	Holder	206Z271020
0004	Ltd	206Z257010
0005	Terminal	206Z123010
0006	Spring	206Z115010
0007	Bushing	206Z259010
0008	Heatsink	206Z267010
0009 (CSA4)	Label	206Z861010
0009 (CSA4SA)	Label	206Z861020
0010	Leg	206Z057010
0011	Screw	51300306U0
0012	Screw	51300308U0
0013	Screw	51300408B0
0014	Ring	64001500R0
	Plug Adaptor (CSA4SA)	YJ0400086R

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REFERENCE DESIGNATOR	DESCRIPTION	SCC PART NO.	EXPLODED PARTS VIEW LOCATION
011F	Shield	109C109022	C6
012F	Insulator	109C120040	C7
013F	Shield	109C109030	C6
014F	Insulator	109C120050	C6
015F	Shield	109C109013	C5
016F	Insulator	109C120012	C6
017F	Label	4733861030	C4
018F	Label	109C861020	C4

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REFERENCE DESIGNATOR	DESCRIPTION	SCC PART NO.	EXPLODED PARTS VIEW LOCATION
001B	Frame	109C401012	B4
00 B	Escutcheon	109C063012	A5
005B	Knob	4736154060	A5
006B	Cover	109C053023	A6
007B	Nut	53228059E0	B5
008B	Nut	53228119E0	A4
009B	Nut	53226019E0	A5
010B	Nut	53227069E0	A5
011B	Lug	62100019E0	B5
012B	Knob	109C154012	A6
013B	Screw	51692603Q0	A6
015B	Knob	3782154043	A7
016B	Screw	51692603Q0	A7
020B	Button	109C270014	B3
021B	Spring	109C115012	B3
023B	Label	3729861043	B4
031B	Contact	109C123010	B3
032B	Insulator	109C120022	B3
033B	Screw	51062603E0	B4
034B	Screw	50062604B0	B3
035B	Washer	59260505P0	B4
037B	Cover	109C053030	B4
036	Washer	59046502G9	C4
040B	Stopper	109C114010	B5
041B	Screw	51040205E0	C4
043B	Nameplate	109C265024	C3
050B	Case	109C064014	B8
051B	Nameplate	109C203012	A8
052B	Bracket	109C160012	A8
053B	Screw	51042605E0	A8
054B	Bushing	109C259010	B7
055B	Label	109C861012	B5
056B	Packing	109C277010	B7
057B	Grill	3512269020	A7
061B	Screw	51142605C0	A5 , B5
062B	Screw	51102608E0	C5 , C6
065B	Case	109C064024	A1
066B	Packing	109C277022	A1
068B	Screw	51063019L9	A1
069B	Screw	51142605C0	A5 , B6
001F	Screw	51282606B0	B8 , C8
003F	Bolt	52730305S9	C6
006F	Shield	3621109032	C8
007	Core	3621161012	C8
009	Lug	62261240W0	B8 , C8

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REFERENCE DESIGNATOR	VALUE	TYPE	SCC PART NO.	P.C. BOARD LOCATION
R247, R248	39 ohm, 2 W	Fixed Metal Oxide	GJ05390020	F6, F6
<i>Resistors not listed are standard, fixed carbon composition, ±5%, 1/8 watt. The resistance values, in ohms, are indicated on the schematic diagram.</i>				
<u>MISCELLANEOUS ELECTRICAL:</u>				
E001	8 ohm	Speaker	QK00508010	G1
F101	21.4 MHz	Crystal	XU721400MS	E6
F102, F103	CFU455E	Ceramic Filter	FG455304E0	E4, D4
F104	CFA455S	Filter	FH455301E0	C4
F201	-	Ferrite Core	FC90050010	E7
J002	-	Jack	YJ01001020	G2
J003	6-pin	Jack	YJ10001600	E
J004	9-pin	Jack	YJ10000520	B1
J005	9-pin	Plug	YP10001060	A1
J006	-	Jack	YJ01001020	A6
J501	BNC	Jack	YJ10001620	G5
N001	-	Microphone	MS50000100	G1
S001	-	Switch	SM01020210	D1
S301	-	Switch	SR02060120	A8
X101	20.945 MHz or 21.855 MHz	Crystal	XZ42094505	D5
			XZ42185505	D5

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REFERENCE DESIGNATOR	VALUE	TYPE	SCC PART NO.	P.C. BOARD LOCATION
Q103	2SC460B	Transistor	HT304601B0	E5
Q104, Q105, Q114, Q115, Q116, Q120, Q122	2SC536	Transistor	HT305360F0	E5, E5, C4, B4, B4, B5, B4
Q106	H8D1152E	I.C.	HC10012230	D4
Q107, Q108, Q109, Q117, Q118	OA99	Diode	HD10005020	C4, C4, D4, B4, B4
Q110	UPC575C2	I.C.	HD10037060	B5
Q111	2SC535C	Transistor	HT305351C0	E4
Q112	2SC2407	Transistor	HT32407100	E4
Q113	WZ071	Zener Diode	HD30023090	C4
Q119, Q125, Q126	ISI555	Diode	HD20011050	B5, F5, F5
Q201, Q202	2SC460B	Transistor	HT304601B0	C6, D6
Q203, Q204	IS2689 (F1, F3)	Varicap	HD40011090	D6, D5
Q203, Q204	IS2689A (F4, F5)	Varicap	HD40016090	D6, D5
Q205, Q206, Q208	2SC2347	Transistor	HT32347100	D5, D6, D7
Q207	HZ6L	Zener Diode	HD30008010	D5
Q209	2SC2644	Transistor	HT32644000	E6
Q210	2SC2494	Transistor	HT32494100	E7
Q211	2SC2283	Transistor	HT32283100	F7
Q212	MI303	Diode	HD20005200	G5
Q213	MI301	Diode	HD20001200	F5
Q214	H8D1219	I.C.	HC10004230	D4
Q215, Q223	OA99	Diode	HD10005020	C5, C4
Q216	2SA608	Transistor	HT106082A0	C5
Q217	2SD571	Transistor	HT40571100	C5
Q218	WZ100	Zener Diode	HD30072090	C4
Q219, Q220, Q222	ISI555	Diode	HD20011050	C5, C5, E7
Q221	2SC536	Transistor	HT305360F0	C5
Q401	LN222RP	L.E.D.	HI10025020	F2
Q402	WZ065	Zener Diode	HD30036090	F2
<u>RESISTORS:</u>				
R001	20K ohm	Variable	RB12030020	A4
R002	10K ohm	Variable	RB11030070	D1
R004	10K ohm	Variable	RA01030520	D2
R104	220K ohm, 1/8 W (F4, F5)	Tip Resistor	RI05224180	A8
R141	10K ohm, 1/4 W	Fixed Carbon	GD05103140	C4
R151, R162, R163, R154, R165, R166	3.3K ohm, 1.8 W (F3, F4, F5)	Tip Resistor	RI05332180	C7, C7, C7, C8, C8, C8
R211, R214	150 ohm, 1/4 W	Fixed Carbon	GD05151140	D5, D6
R213, R216	100 ohm, 1/4 W	Fixed Carbon	GD05101140	C5, D7
R219	15 ohm, 1/4 W	Fixed Carbon	GD05150140	E7
R220	270 ohm, 1/4 W	Fixed Carbon	GD05271140	E6
R233	4.7K ohm	Trimming	RA04720100	D4

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REFERENCE DESIGNATOR	VALUE	TYPE	SCC PART NO.	P.C. BOARD LOCATION
L103	(F3)	Antenna Coil	LA70260090	F4
L103	(F4)	Antenna Coil	LA70260130	F4
L103	(F5)	Antenna Coil	LA70260160	F4
L105, L114	0.3 uH	Choke Coil	LC13010020	F4, F5
L107	-	I.F.T.	LI70280030	F6
L108	-	I.F.T.	LI55016190	E5
L109	-	I.F.T.	LI55016200	E4
L110, L116	1 mH	Choke Coil	LC11050040	F4, C4
L111	-	Doubler Coil	LW55016080	E4
L112	-	Doubler Coil	LW55016010	E4
L113	-	Doubler Coil	LW55016020	E4
L115	(F1)	Antenna Coil	LA70260200	E5
L115	(F3)	Antenna Coil	LA70260100	E5
L115	(F4)	Antenna Coil	LA70260140	E5
L115	(F5)	Antenna Coil	LA70260170	E5
L117	390 uH	Choke Coil	LC13940010	B4
L121, L122, L123, L124, L125, L126	0.82 uH (F1)	Choke Coil	LC18210030	C7, C7, C7, D7, D7, D7
L121, L122, L123, L124, L125, L126	0.68 uH (F3, F4, F5)	Choke Coil	LC16810070	C7, C7, C7, D7, D7, D7
L201	10 uH	Choke Coil	LC11030020	D5
L202, L203	-	Antenna Coil	LA55016050	D6, D5
L204, L205	-	Doubler Coil	LW55016030	D5, D5
L206, L207, L209	-	Doubler Coil	LW55016020	D6, D6, E7
L208	-	Doubler Coil	LW55016050	D7
L210	0.26 uH	Choke Coil	LC12610010	E6
L211	3 1/4 T (F1)	Choke Coil	LC15000220	E6
L211	2 3/4 T (F3, F4, F5)	Choke Coil	LC15000210	E6
L212	2 1/4 T (F1)	Choke Coil	LC13300020	E7
L212	1 3/4 T (F3, F4, F5)	Choke Coil	LC13300010	E7
L213, L215	-	Twist Coil	LM42518010	F6, F7
L214	0.2 uH	Choke Coil	LC12010012	F7
L216	0.16 uH	Choke Coil	LC11610010	F5
L217, L218, L219	0.034 uH	Choke Coil	LC13400010	F5, G5, F4
L220	27 mH	Choke Coil	LC22760010	D4
L221	0.3 uH	Choke Coil	LC13010022	E6
L501	0.028 uH	Choke Coil	LC12800010	G4
SEMICONDUCTORS:				
Q001	10D2	Diode	HD20001100	A5
Q002	OA99	Diode	HD10005020	D1
Q003	-	Thermistor	HH00007030	A8
Q101	3SK48A	F.E.T.	HF400481A0	F4
Q102	2SK48	F.E.T.	HF40048100	F5

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REFERENCE DESIGNATOR	VALUE	TYPE	SCC PART NO.	P.C. BOARD LOCATION
C229	12 pF (F3, F4, F5)	Ceramic	DD15120330	E7
C230	22 pF (F1, F3, F4)	Ceramic	DD15220330	E7
C230	18 pF (F5)	Ceramic	DD15180330	E7
C231, C233, C248, C294, C295	39 pF	Ceramic	DD15390360	E6, E6, F6, D5, D6
C234	0.01 uF	Ceramic	DK78103010	E6
C236	12 pF (F1)	Ceramic	DD15120300	E6
C236	10 pF (F3)	Ceramic	DD11100300	E6
C236	7 pF (F4)	Ceramic	DD11070300	E6
C236	6 pF (F5)	Ceramic	DD11060300	E6
C238	33 pF (F1)	Ceramic	DD15330300	E7
C238	30 pF (F3)	Ceramic	DD15300300	E7
C238	27 pF (F4, F5)	Ceramic	DD15270300	E7
C239	5 pF (F1, F3, F4)	Ceramic	DD10050300	E7
C239	4 pF (F5)	Ceramic	DD10040300	E7
C240	22 pF (F1, F3, F4)	Film	DF95220500	E7
C241	22 pF	Chip Mica	DF95220500	E6
C244, C249, C251	10 pF	Trimming	CT11000020	F6, F6, F6
C245, C289	0.001 uF	Ceramic	DK18102300	E6, E7
C246	10 pF	Ceramic	DD11100300	F7
C250	5 pF (F1, F3)	Ceramic	DD10050300	G6
C252, C253	330 pF	Ceramic	DK16331300	F5, F5
C254	51 pF	Ceramic	DL15510370	G5
C255, C256	5 pF	Ceramic	DD10050300	F5, F4
C261	0.001 uF	Ceramic	DK46102300	E7
C267, C268, C269, C270, C271, C272	20 pF	Trimming	CT12000110	B6, B6, B6, B7, B7, B7
C273	0.15 uF	Ceramic	DK26154010	D4
C274, C276	1 uF, 50 V	Electrolytic	EJ10505010	D5, D4
C275	0.22 uF, 50 V	Electrolytic	EJ22405010	D4
C277, C279	0.47 uF, 50 V	Electrolytic	EJ47405010	D4, C4
C284, C285, C291, C292	470 pF	Ceramic	DD45471370	C4, C4, D4, D4
C287	1 uF, 25 V	Electrolytic	EV10502560	C4
C293	0.001 uF	Ceramic	DK18102300	C5
C296	470 pF	Ceramic	DK16471300	C4
C401	10 uF, 16 V	Electrolytic	EJ10601610	F1
C501	5 pF	Ceramic	DD10050300	G4
<u>INDUCTORS:</u>				
L001	1 uH (F1)	Choke Coil	LC11020020	E2
L101	(F3)	Antenna Coil	LA70260180	F4
L101	(F4)	Antenna Coil	LA70260080	F4
L101	(F5)	Antenna Coil	LA70260120	F4
L103	(F1)	Antenna Coil	LA70260150	F4
			LA70260190	F4

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REFERENCE DESIGNATOR	VALUE	TYPE	SCC PART NO.	P.C. BOARD LOCATION
C169	0.0022 uF	Semiconductor	DS17222010	B4
C172	22 uF, 10 V	Electrolytic	EV22601060	B5
C174	0.001 uF	Ceramic	DK46102300	B5
C175, C179	47 uF, 16 V	Electrolytic	EA47601630	B5, C4
C177	100 uF, 10 V	Electrolytic	EA10701030	C5
C178	0.22 uF	Ceramic	DK27224010	35
C181, C182	0.33 uF	Ceramic	DK26333010	B4, B4
C183	1 uF, 50 V	Electrolytic	EJ10505010	B5
C185	33 uF, 10 V	Electrolytic	EV33601060	C5
C188, C190	30 pF	Ceramic	DD45300300	E4, E4
C189	56 pF	Ceramic	DD45560300	E4
C201	51 pF	Ceramic	DD15510300	C6
C202	75 pF	Ceramic	DD15750300	C6
C203, C207, C213, C280, C283	0.01 uF	Semiconductor	DS17103010	C6, C5, D5, C4, D4
C204, C206	24 pF	Ceramic	DD15240360	C6, C6
C205	33 pF	Ceramic	DD15330300	C6
C208	10 pF (F1)	Ceramic	DD11100300	D6
C208	7 pF (F3, F4, F5)	Ceramic	DD11070300	D6
C209, C211	0.001 uF	Ceramic	DA17102010	D6, D5
C210, C216, C235	3 pF (F1)	Ceramic	DD10030300	D5, D6, E6
C210, C216, C235	2 pF (F3, F4, F5)	Ceramic	DD10020300	D5, D6, E6
C212	15 pF	Ceramic	DD15150300	D5
C214	100 pF (F1)	Ceramic	DD45101330	D5
C214	82 pF (F3)	Ceramic	DD45820220	D5
C214	82 pF (F4)	Ceramic	DD45820330	D5
C214	68 pF (F5)	Ceramic	DD45680330	D5
C215, C221, C226	0.0047 uF	Semiconductor	DS17472010	D5, E6, D7
C217, C243	180 pF (F1)	Ceramic	DD45181330	D6, D6
C217, C243	150 pF (F3, F4, F5)	Ceramic	DD45151330	D6, D5
C218, C219, C225, C258, C282, C290	0.001 uF	Ceramic	DK16102300	D6, D5, D7, F5, C4, C5
C220, C232, C242 C247, C278, C281, C286	10 uF, 16 V	Electrolytic	EJ10601610	D5, E6, E6, G7, C4, C5, D5
C222, C224	47 pF (F1)	Ceramic	DD15470330	D6, D7
C222, C224	39 pF (F3)	Ceramic	DD15390330	D6, D7
C222, C224	33 pF (F4, F5)	Ceramic	DD15330330	D6, D7
C223	2 pF (F1)	Ceramic	DD10020300	D6
C223	1.5 pF (F3, F4, F5)	Ceramic	DD10015300	D6
C227, C262, C263	10 pF (F1)	Ceramic	DD11100300	E7
C227	8 pF (F3)	Ceramic	DD11080300	E7
C227	6 pF (F4, F5)	Ceramic	DD11060300	E7
C228	1.5 pF (F1)	Ceramic	DD10015300	E7
C228, C237	1 pF (F3, F4, F5)	Ceramic	DD10010300	D7, E6
C229	18 pF (F1)	Ceramic	DD15180330	E7

734L ELECTRICAL

REFERENCE DESIGNATOR	VALUE	TYPE	SCC PART NO.	P.C. BOARD LOCATION
C169	0.0022 uF	Semiconductor	DS17222010	B4
C172	22 uF, 10 V	Electrolytic	EV22601060	B5
C174	0.001 uF	Ceramic	DK46102300	B5
C175, C179	47 uF, 16 V	Electrolytic	EA47601630	B5, C4
C177	100 uF, 10 V	Electrolytic	EA10701030	C5
C178	0.22 uF	Ceramic	DK27224010	B5
C181, C182	0.33 uF	Ceramic	DK26333010	B4, B4
C183	1 uF, 50 V	Electrolytic	EJ10505010	B5
C185	33 uF, 10 V	Electrolytic	EV33601060	C5
C188, C190	30 pF	Ceramic	DD45300300	E4, E4
C189	56 pF	Ceramic	DD45560300	E4
C201	51 pF	Ceramic	DD15510300	C6
C202	75 pF	Ceramic	DD15750300	C6
C203, C207, C213, C280, C283	0.01 uF	Semiconductor	DS17103010	C6, C5, D5, C4, D4
C204, C206	24 pF	Ceramic	DD15240360	C6, C6
C205	33 pF	Ceramic	DD15330300	C6
C208	10 pF (F1)	Ceramic	DD11100300	D6
C208	7 pF (F3, F4, F5)	Ceramic	DD11070300	D6
C209, C211	0.001 uF	Ceramic	DA17102010	D6, D5
C210, C216, C235	3 pF (F1)	Ceramic	DD10030300	D5, 6, E6
C210, C216, C235	2 pF (F3, F4, F5)	Ceramic	DD10020300	D5, D6, E6
C212	15 pF	Ceramic	DD15150300	D5
C214	100 pF (F1)	Ceramic	DD45101330	D5
C214	82 pF (F3)	Ceramic	DD45820220	D5
C214	82 pF (F4)	Ceramic	DD45820330	D5
C214	68 pF (F5)	Ceramic	DD45680330	D5
C215, C221, C226	0.0047 uF	Semiconductor	DS17472010	D5, E6, D7
C217, C243	180 pF (F1)	Ceramic	DD45181330	D6, D6
C217, C243	150 pF (F3, F4, F5)	Ceramic	DD45151330	D6, D6
C218, C219, C225, C258, C282, C290	0.001 uF	Ceramic	DK16102300	D6, D5, D7, F5, C4, C5
C220, C232, C242, C247, C278, C281, C286	10 uF, 16 V	Electrolytic	EJ10601610	D5, E6, E6, G7, C4, C5, D5
C222, C224	47 pF (F1)	Ceramic	DD15470330	D6, D7
C222, C224	39 pF (F3)	Ceramic	DD15390330	D6, D7
C222, C224	33 pF (F4, F5)	Ceramic	DD15330330	D6, D7
C223	2 pF (F1)	Ceramic	DD10020300	D6
C223	1.5 pF (F3, F4, F5)	Ceramic	DD10015300	D6
C227, C262, C263	10 pF (F1)	Ceramic	DD11100300	E7
C227	8 pF (F3)	Ceramic	DD11080300	E7
C227	6 pF (F4, F5)	Ceramic	DD11060300	E7
C228	1.5 pF (F1)	Ceramic	DD10015300	E7
C228, C237	1 pF (F3, F4, F5)	Ceramic	DD10010300	D7, E6
C229	18 pF (F1)	Ceramic	DD15180330	E7

734L ELECTRICAL

REFERENCE DESIGNATOR	VALUE	TYPE	SCC PART NO.	P.C. BOARD LOCATION
C001,C004,C005, C006,C007,C008, C009,C010,C011, C012	0.001 uF	Ceramic	DK16102300	A5,A5,A5, G1,G2,E1, E2,E2,G1, A4
C002	470 pF	Ceramic	DK16471300	G1
C003	0.33 uF, 35 V	Electrolytic	EV33403560	A2
C101,C102,C104, C106,C109,C151, J187	39 pF	Ceramic	DD15390360	F4,F4,F4, F4,F4,E5, F4
C103,C176,C184	330 pF	Ceramic	DK16331300	F4,B5,B4
C105,C111,C119, C120,C186	0.001 uF	Ceramic	DK16102300	F4,E5,C4, C4,B4
C107	68 pF	Ceramic	DD45680330	E5
C108	0.022 uF	Semiconductor	DS17223010	F5
C110,C146,C152, C165	0.0047 uF	Semiconductor	DS17472010	E6,E4,E4, B4
C112	10 pF	Ceramic	DD11100300	E5
C113	62 pF	Ceramic	DD15620300	E5
C114,C115	100 pF	Ceramic	DD15101350	E5,E5
C116,C167	0.01 uF	Semiconductor	DS17103010	E5,B4
C117	470 pF	Ceramic	DK16471300	D4
C118,C153,C171	10 uF, 16 V	Electrolytic	EJ10601610	D4,C4,B4
C121	0.01 uF	Ceramic	DA17103010	D4
C122	100 pF	Ceramic	DD45101300	D4
C131,C132,C133, C134,C135,C136	5 pF (F1)	Ceramic	DD10050300	C6,C6,C7, C6,D6,D6
C131,C132,C133, C134,C135,C136	7 pF (F3,F4,F5)	Ceramic	DD11070300	C6,C6,C7, C6,D6,D6
C137,C138,C139, C140,C141,C142	20 pF	Trimming	CT12000110	B6,C6,C7, C6,D6,D6
C144	47 pF	Ceramic	DD15470360	E3
C145	100 pF	Ceramic	DD15101360	E4
C147	20 pF (F1)	Ceramic	DD15200300	E4
C147	13 pF (F3,F4)	Ceramic	DD15130300	E4
C147	11 pF (F5)	Ceramic	DD15110300	E4
C148	0.5 pF	Ceramic	DD10005370	E4
C149	18 pF (F1)	Ceramic	DD15180300	F4
C149	33 pF (F3,F4)	Ceramic	DD15330300	F4
C149	24 pF (F5)	Ceramic	DD15240300	F4
C150	43 pF (F1)	Ceramic	DD15430300	F4
C150	9 pF (F3,F4)	Ceramic	DD11090300	F4
C150	8 pF (F5)	Ceramic	DD11080300	F4
C161,C170,C180	0.1 uF	Ceramic	DK26104010	C4,B4,A4
C162	1 uF, 25 V	Electrolytic	EV10502560	F5
C162	0.0015 uF	Semiconductor	DS17152010	C4
C164	0.001 uF	Semiconductor	DS17102010	B4
C166	0.0027 uF	Semiconductor	DS17272010	C4
C168,C173	10 uF, 10 V	Electrolytic	EV10601060	B4,B4

PARTS LISTS

GENERAL

The following parts lists include the significant mechanical parts and all the electrical parts of the transceiver, except certain common resistors. Also included are separate parts lists for the optional rapid charger (CSA4 Series), the tunable tone board (TN15), and the external speaker/ microphone (MP635G).

The following information will be useful in interpreting data in the parts lists which are not self-explanatory.

REVISIONS

The parts lists in this manual are for the current build of the transceiver, as of the printing date. If a different part was used in a previous build details of the parts change are included in the revision table on the back of the applicable drawing, in the Drawings section, enabling you to determine the correct replacement part. (If the new part is the recommended replacement part for all units, the old part is not listed in the revision table.)

FREQUENCY SENSITIVE COMPONENTS

Components which vary in value according to frequency range are listed with all other parts. The appropriate frequency range (F3, F4, etc.) is included in the Value Column.

P.C. BOARD LOCATION

This guide references each electrical part to a corresponding location on the printed circuit board layout drawing. The P.C. board layout drawing is gridded for easy location. As asterisk (*) indicates the part is not shown on the printed circuit board drawing.

EXPLODED PARTS VIEW LOCATION

This guide references each mechanical part to a corresponding location on the exploded parts view drawing. The exploded parts view drawing is gridded for easy location.

ORDERING REPLACEMENT PARTS

To order replacement parts for your transceiver from the factory contact the SCC Parts Department at (213) 532-5300, ext. 248, or write to that department at P.O. Box 92151, Los Angeles, California, 90009.

When ordering replacement parts, you must give complete information including reference designator, description, value, part number, and the radio model number. Failure to provide sufficient information may result in SCC's inability to fill your parts orders.

Please note that crystals and crystal filters are not stocked by the Parts Department, but instead by the Frequency Management Department. When ordering crystals/crystal filters, contact Frequency Management at the number listed above, ext. 251, or write to them at the above address.

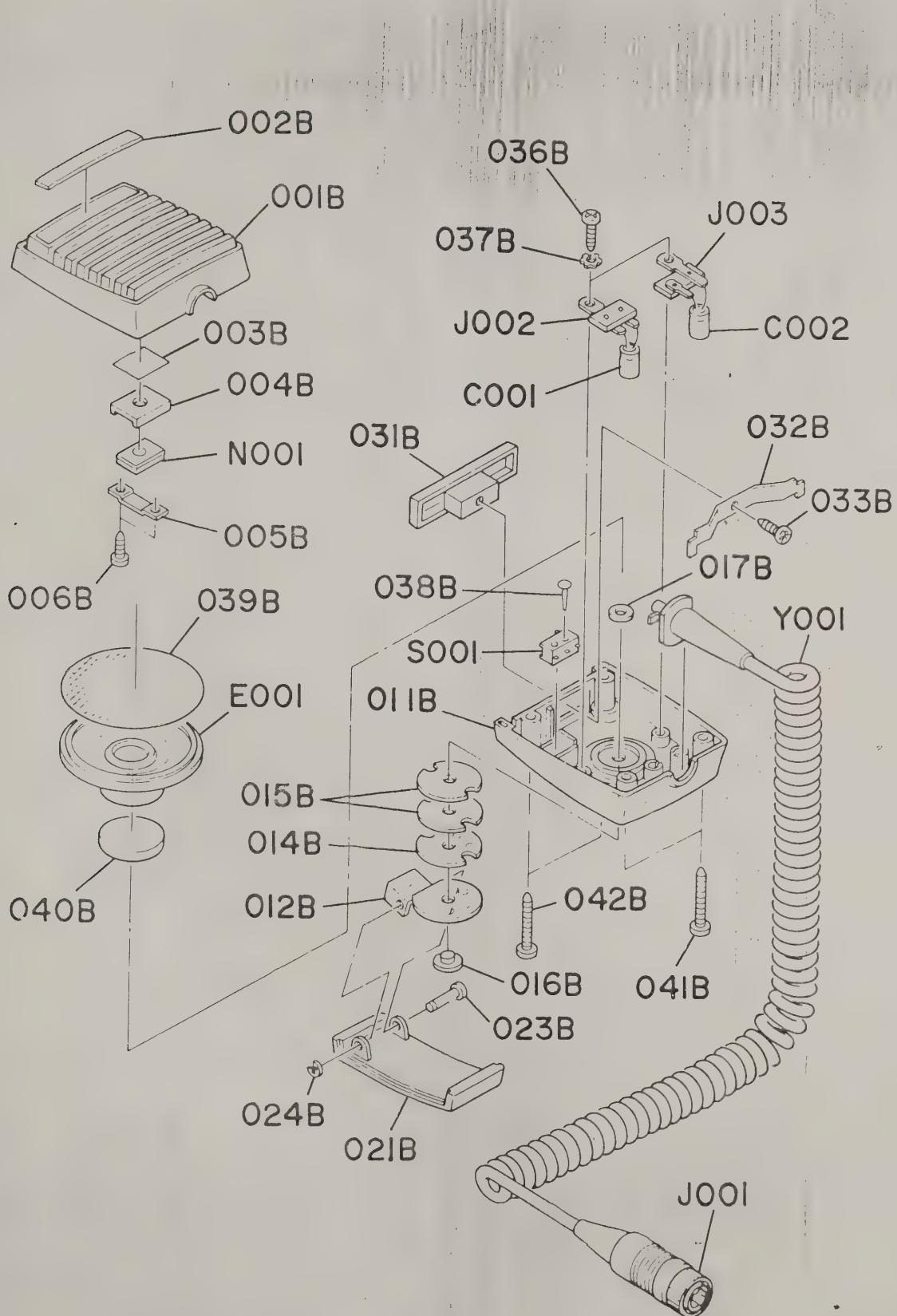
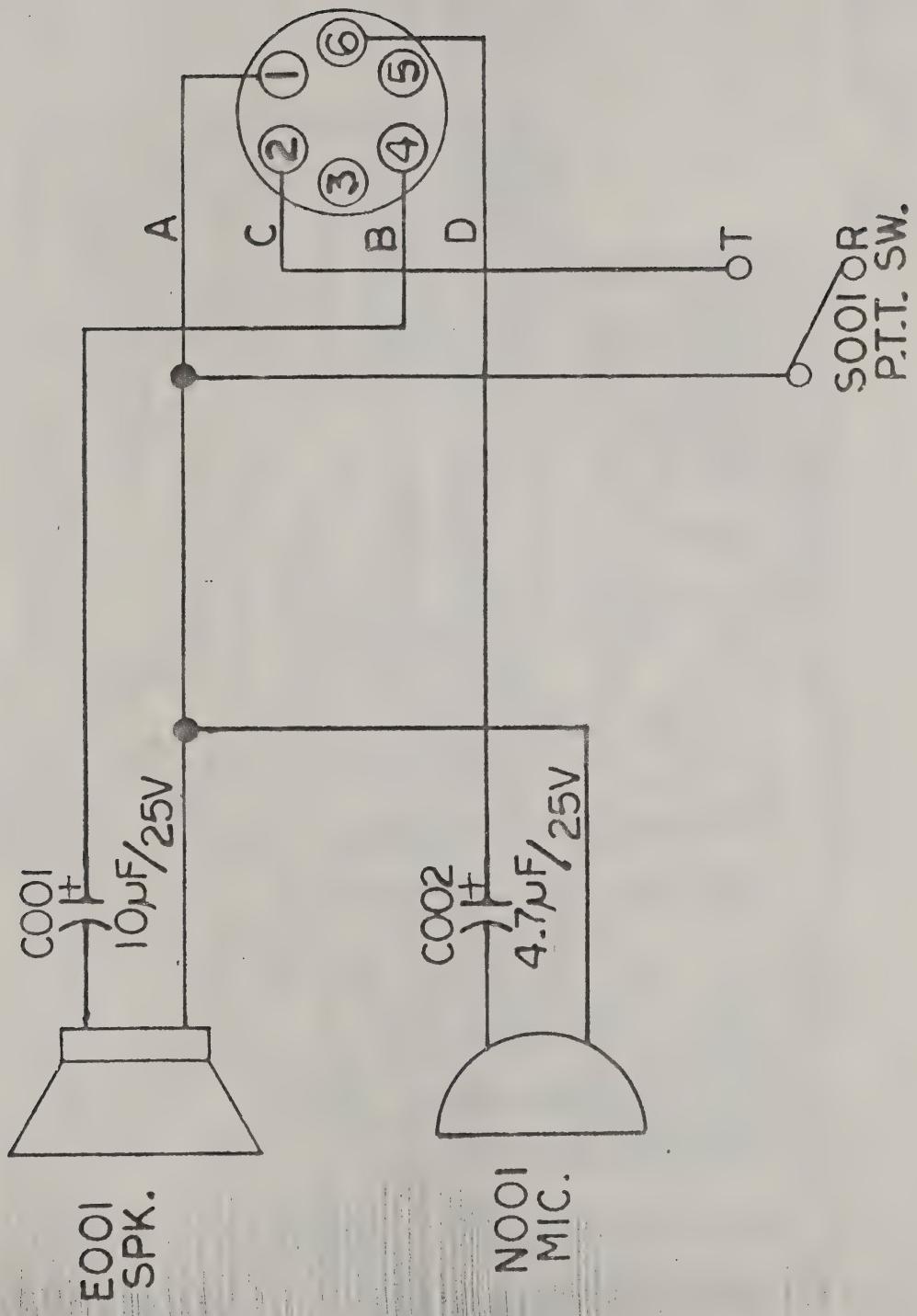


FIGURE 19. MP635G EXPLODED PARTS VIEW



MP635 010C49301
 9-18-80

FIGURE 18. MP635G SCHEMATIC DIAGRAM

TN-15 00649601-0
9-19-80

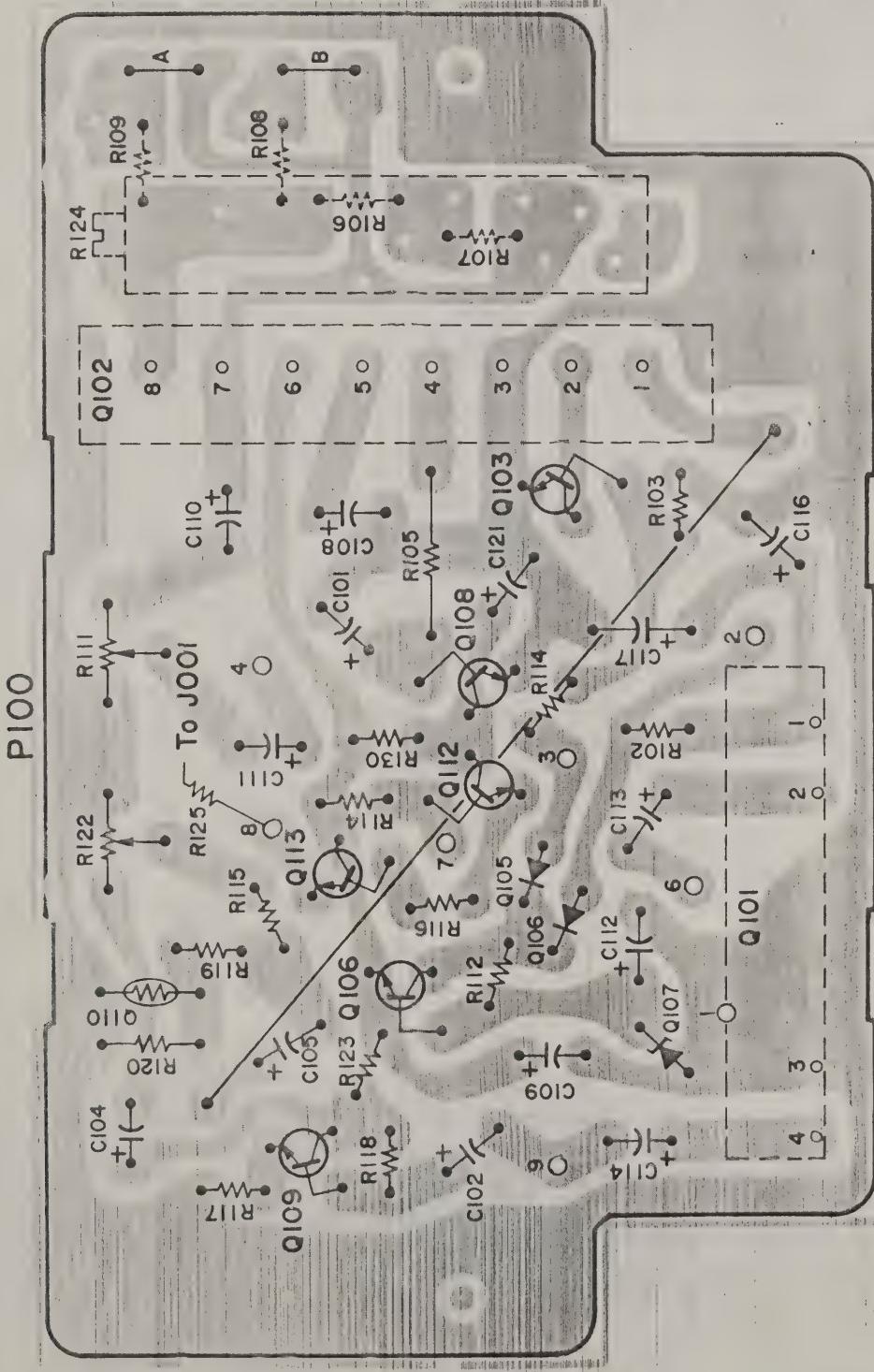
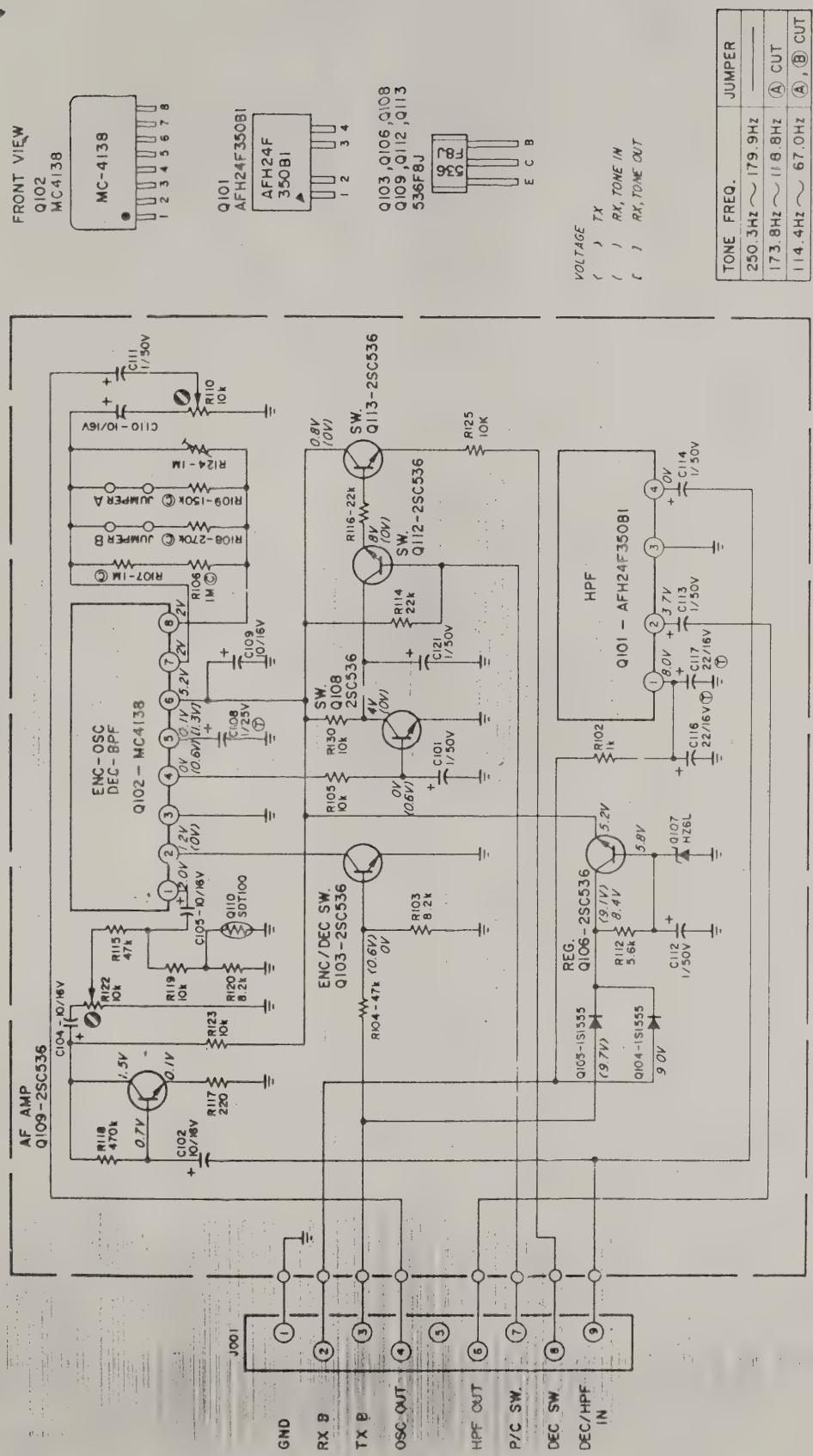


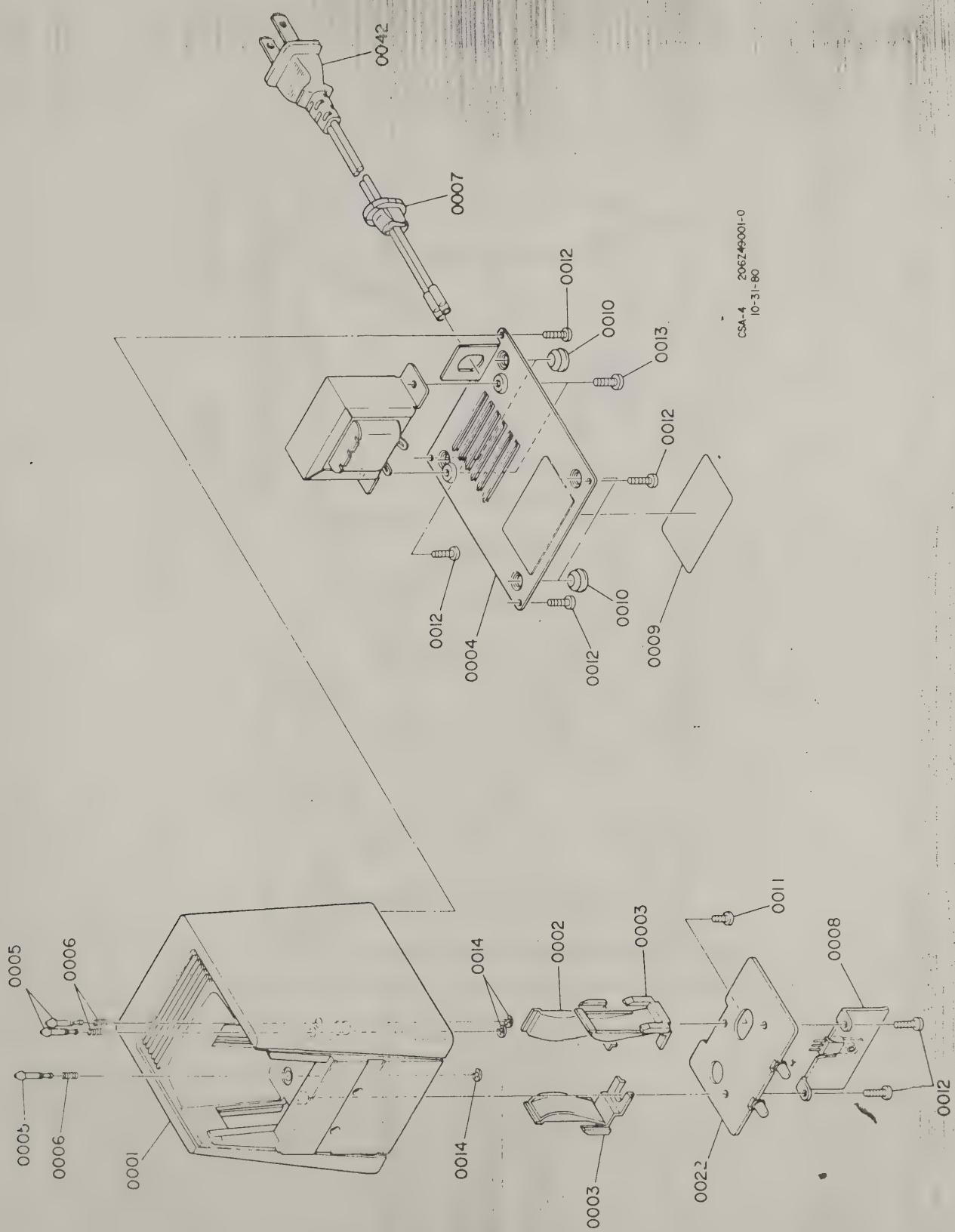
FIGURE 17. TN15 P.C. BOARD LAYOUT
(FOIL SIDE WITH COMPONENT OVERLAY)

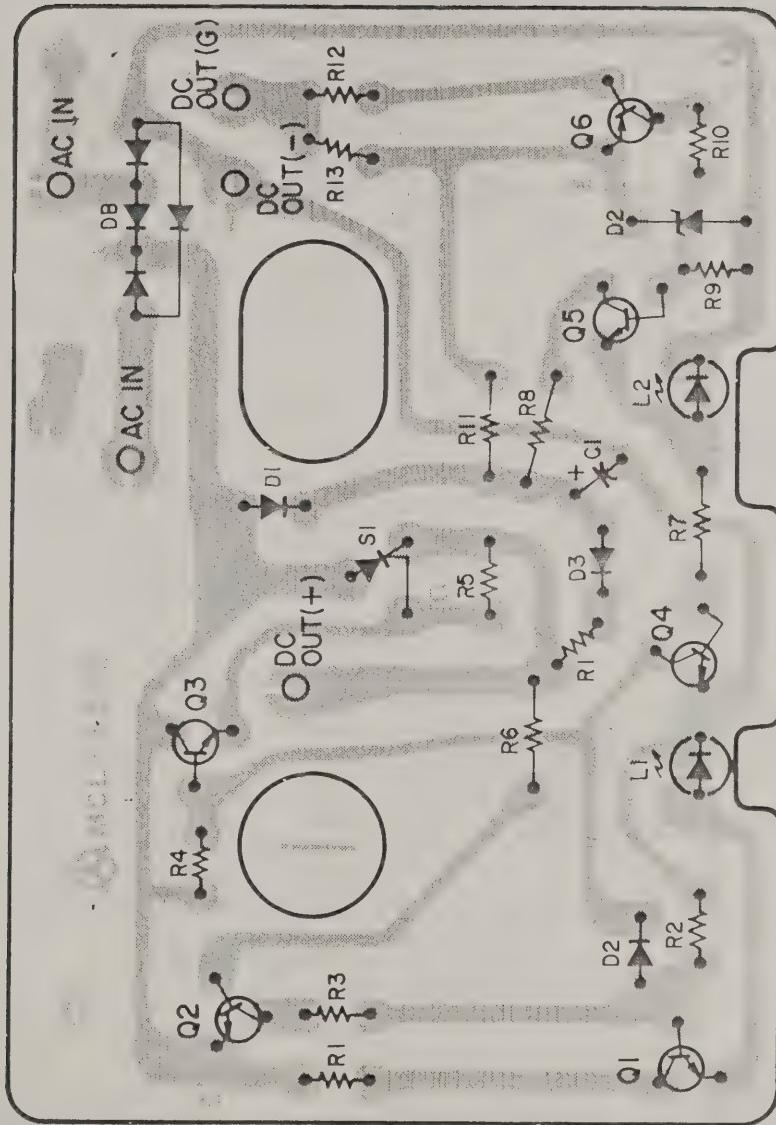
FIGURE 16. TN15 SCHEMATIC DIAGRAM



TN-15 008C49301-0
9-19-80

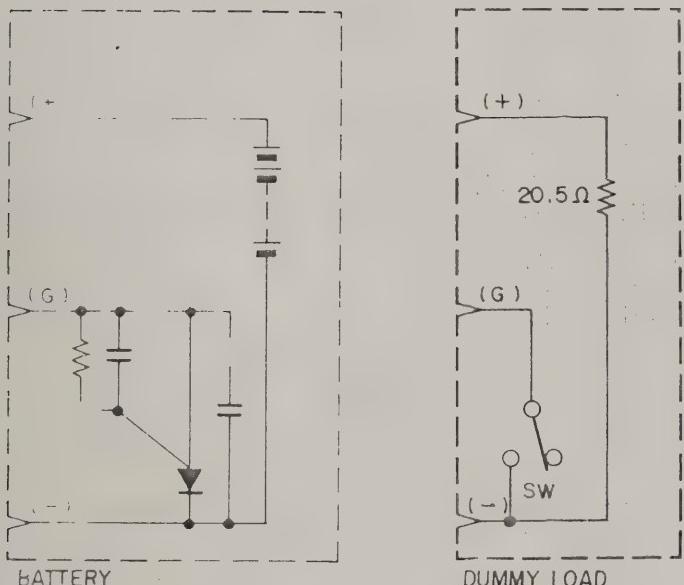
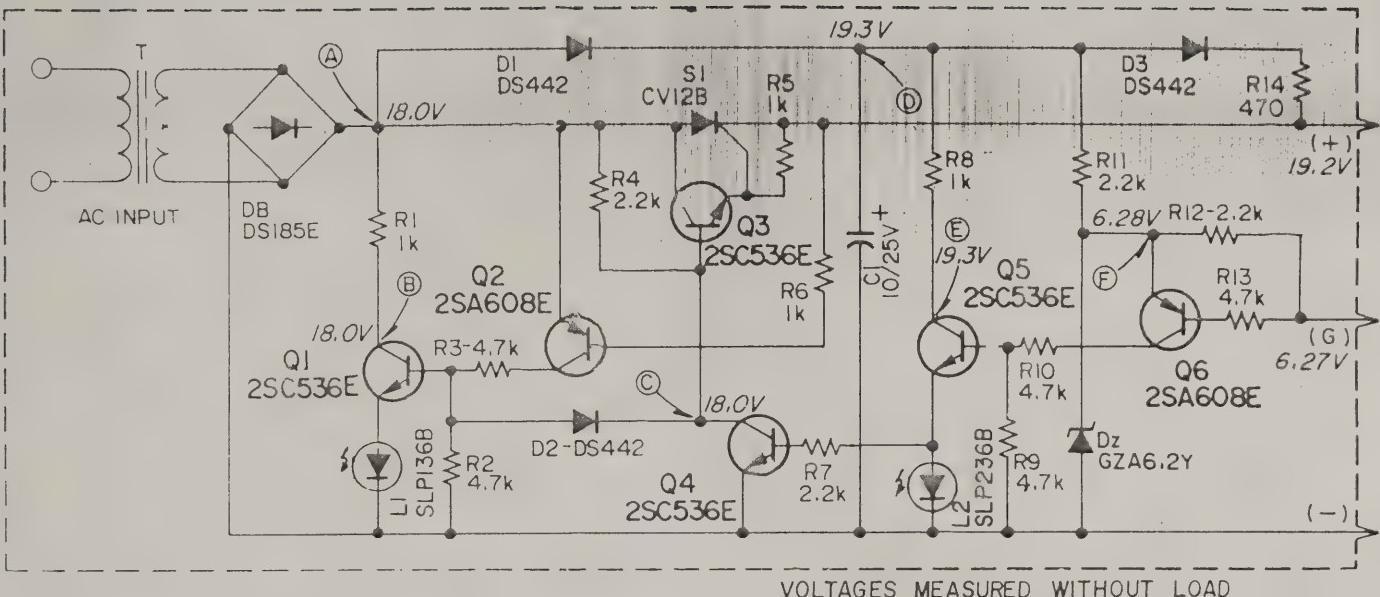
FIGURE 15. CSA4 SERIES EXPLODED PARTS VIEW





CSA-4 206249601-0
10-31-80

FIGURE 14. CSA4 SERIES P.C. BOARD LAYOUT
(FOIL SIDE WITH COMPONENT OVERLAY)



CSA4 206249301-0
10-29-80

FIGURE 13. CSA4 SERIES
SCHEMATIC DIAGRAM

TEST POINT	BATTERY LOAD		DUMMY LOAD	
	RAPID	TRICKLE	RAPID	TRICKLE
(+)	12.95V	12.51V	9.8V	0.9V
(C)	6.24V	0.7V	6.2V	0V
A	13.2V	13.06V	10.4V	10.9V
B	5.6V	13.05V	2.2V	10.9V
C	13.2V	0.07V	10.4V	0.06V
D	13.3V	17.5V	15.6V	16.3V
E	13.3V	2.25V	15.6V	3.7V
F	6.25V	6.2V	6.2V	5.9V

VOLTAGES WITH LOAD

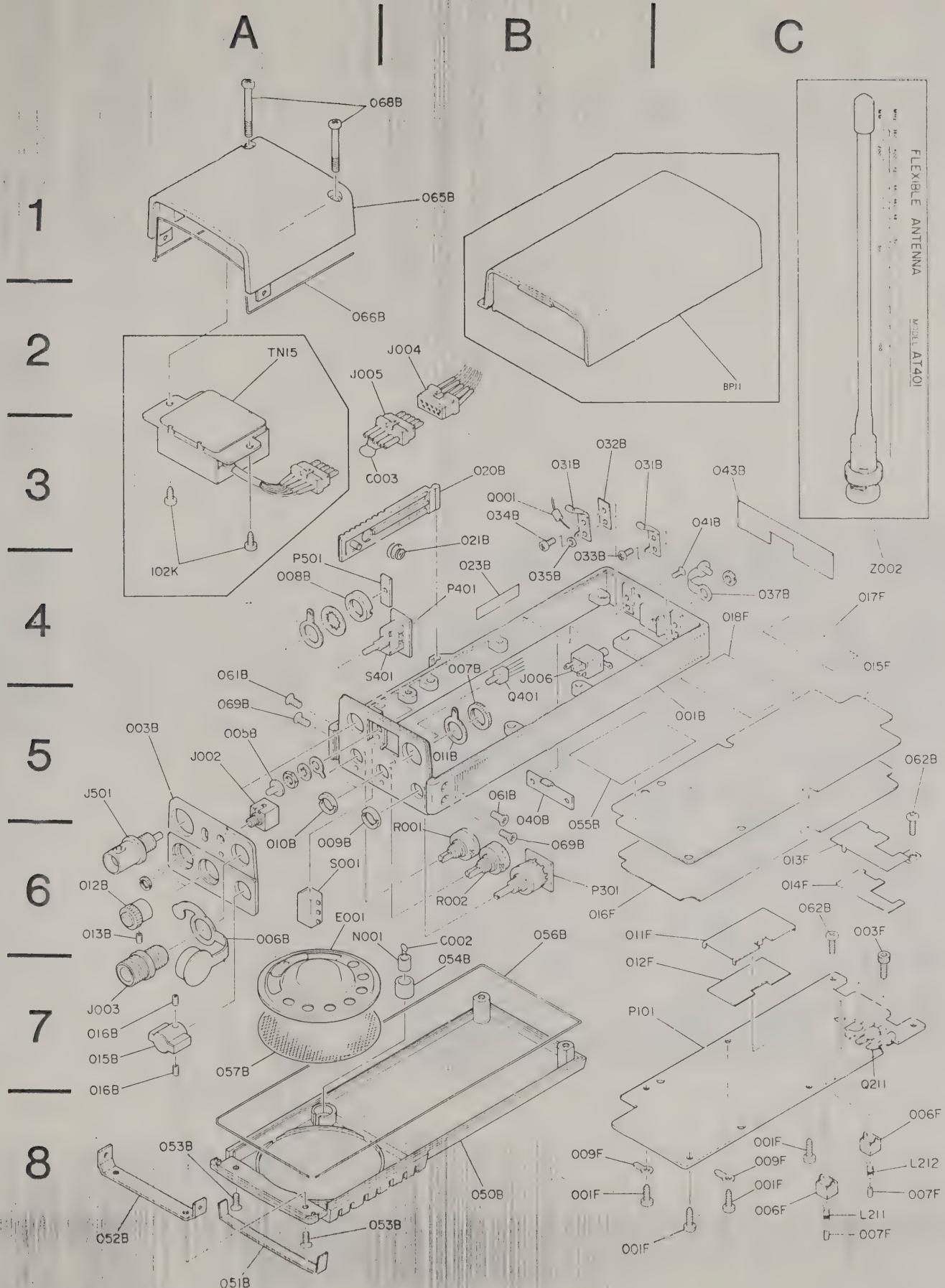


FIGURE 12. 734L EXPLODED PARTS VIEW

A

B

C

1

2

3

4

5

6

7

8

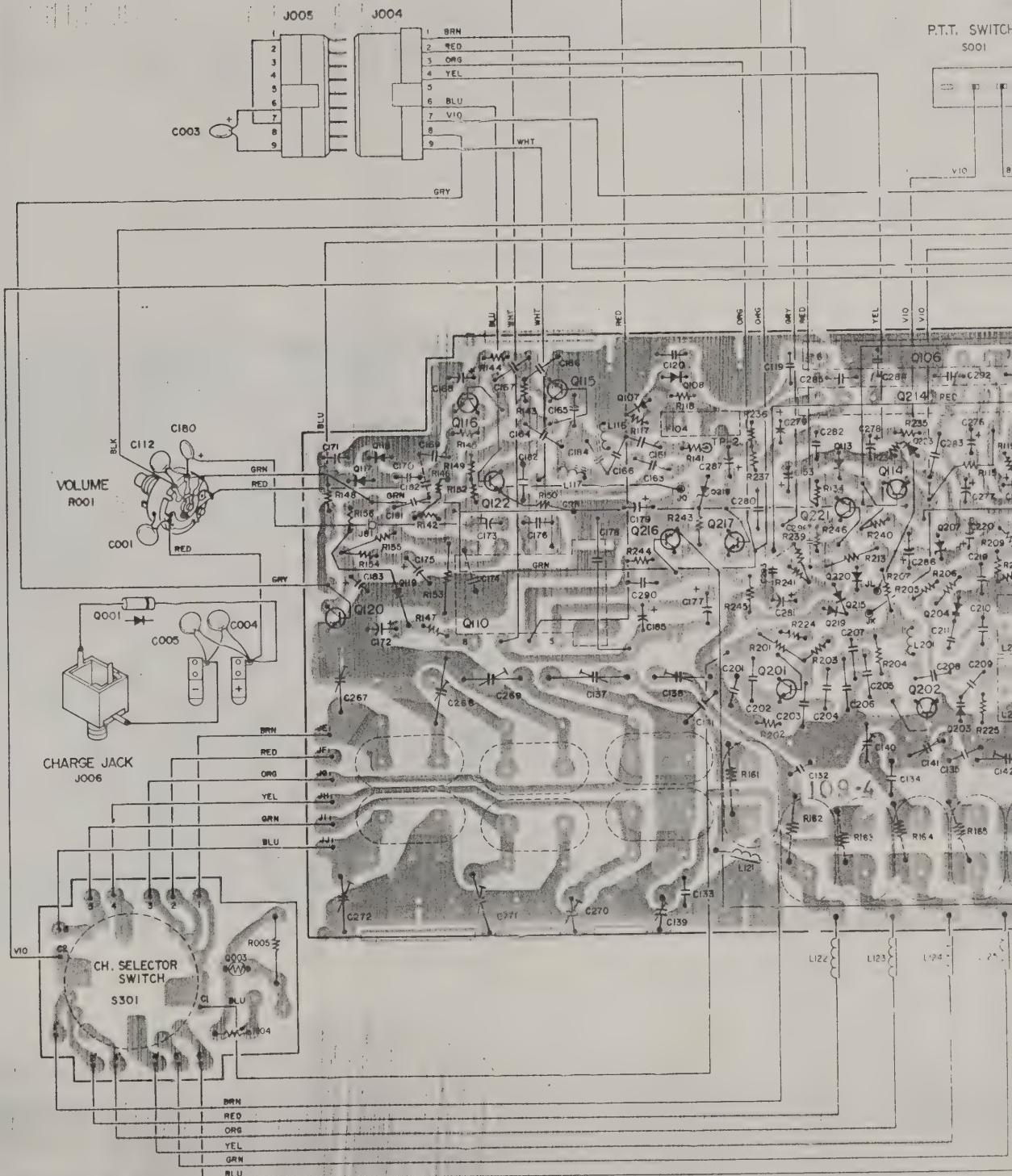
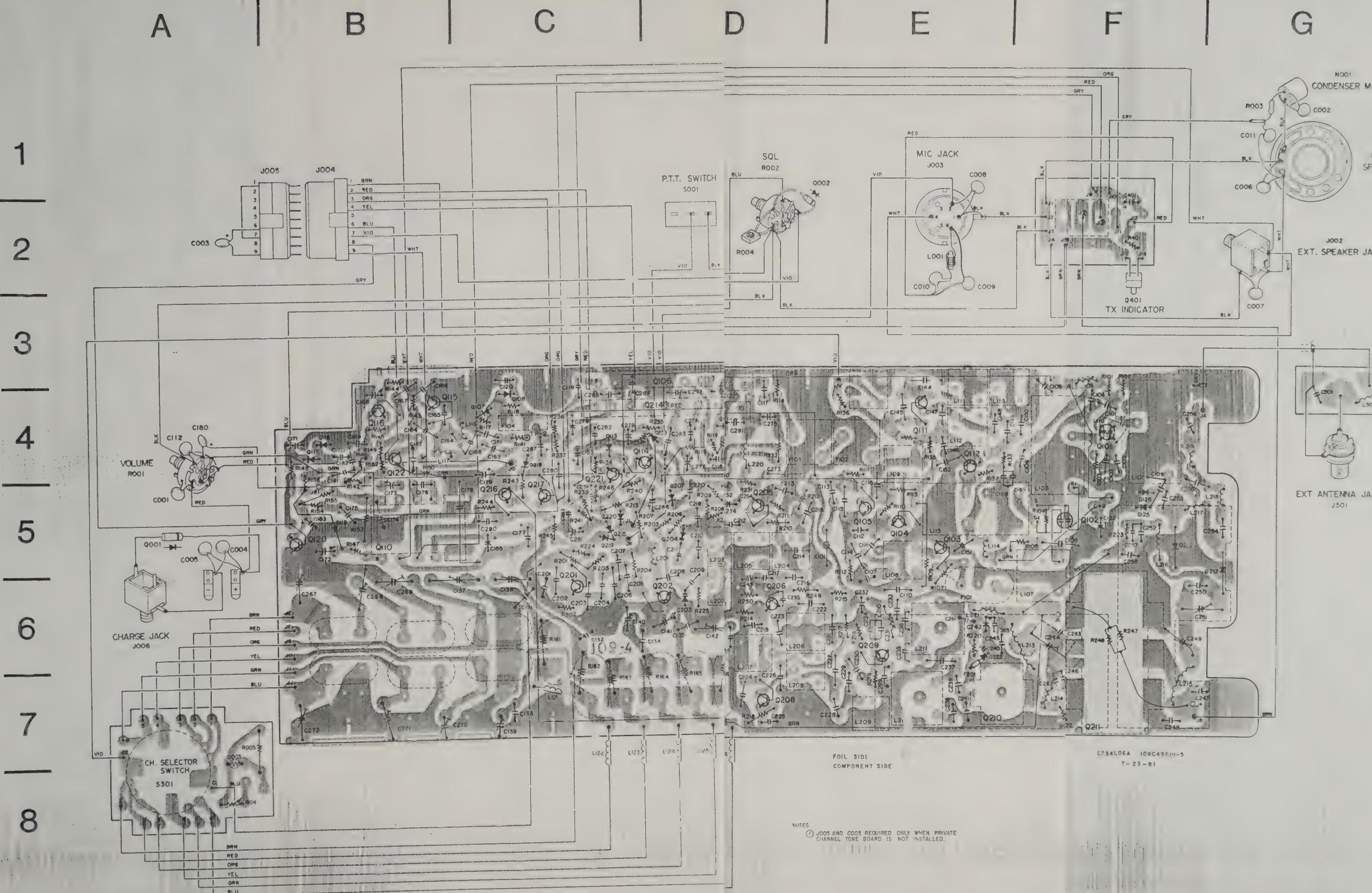
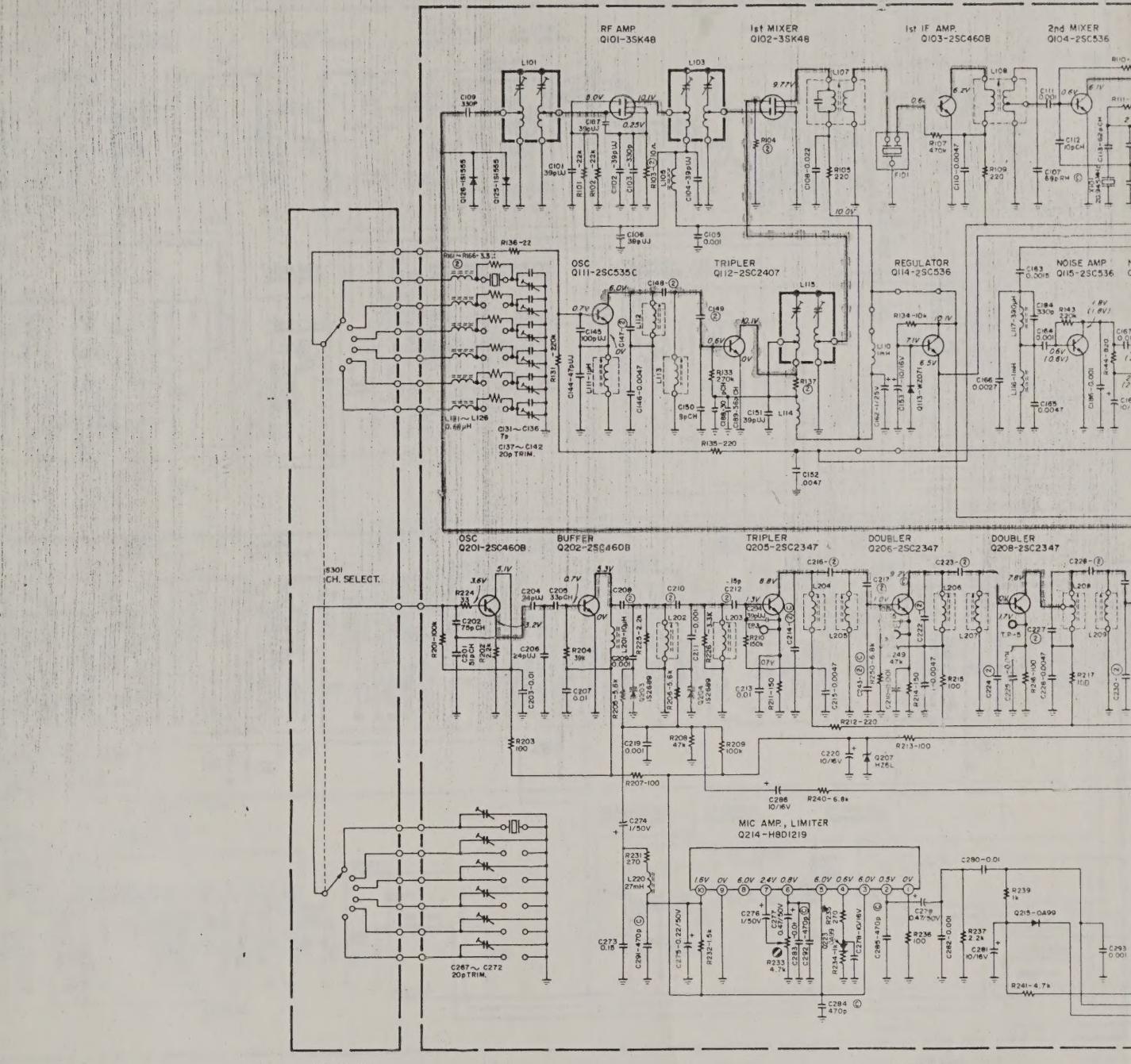


FIGURE 11. 734L P.C. BOARD LAYOUT





BOTTOM VIEW

1 : DRAIN
2 : SOURCE
3 : GATE 1
4 : GATE 2

35K48
Q101, Q102
35S-915 REVERSE RECEIVE SIGNAL
35S-915 REVERSE TRANSMIT SIGNAL
35S-915 REVERSE LOCAL SIGNAL

1 : Emitter
2 : Collector
3 : Base

25C2347
Q205, Q206, Q208
25C2407
Q112
25C2644
Q209

1 : Base
2 : Emitter
3 : Collector

25C2494
Q210
R239 1k
R237 2.2k
C280 0.01
R251 0.499
C282 0.001
R252 2.2k
C283 0.001
R253 2.2k
C284 0.001

1 : Base
2 : Collector
3 : Emitter

F1
F2
F3
F4
F5

RECEIVE
TRANSMIT
ON
OFF
3.3V

FIGURE 10. 734L SCHEMATIC DIAGRAM

